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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,226	10/31/2005	Tae-Uk Jung	5145-0101PUS1	8382

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EXAMINER

NGUYEN, TRAN N

ART UNIT PAPER NUMBER

2834

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/532,226

Applicant(s)

JUNG ET AL.

Examiner

Tran N. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-46 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,11,12,14-16,25,26,30,33,34 and 38 is/are rejected.
- 7) ☒ Claim(s) 2,5-10,13,17-24,27-29,31,32,35-37,39 and 40 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 3, 4, 11, 12, 15, 16 and 34** are rejected under 35 U.S.C. 102(b) as being fully anticipated by **Fong et al (GB 1,206,112)**.

*Regarding claim 1*, **Fong** discloses a rotor (figs 2-8) for a for a line-start reluctance motor, wherein the rotor comprising: a core having an axis-coupling hole in a coupling direction of a shaft (unnumbered in figs 7-8); a plurality of bars (2) formed around in the periphery of the core (figs 2-8, lines 83-85); and a plurality of flux barriers (4-28, figs 2-8); particularly, as shown in figs 6-8, one and the other ends of the flux barriers approaching the bars formed in first and second areas facing each other at a predetermined angle on a central line of a first axis on a core plane vertical to the coupling direction, at least parts of the centers of the flux barriers passing through a third or fourth area between the first and second areas, surrounding the axis coupling hole at predetermined intervals (figs 6-8); wherein:

*Regarding claim 3*, the flux barriers are continuous (figs 2-8);

*Regarding claim 4*, the flux barriers are symmetric on a second axis vertical to the first axis on the core plane;

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*Regarding claim 11*, a width of the flux barriers is smaller than that of the bars that the flux barriers approach (figs 2-8);

*Regarding claim 12*, intervals between the flux barriers and the bars that the flux barriers approach are constant (figs 4-8)

*Regarding claim 15*, some of the bars in the first and second areas are not adjacent to the flux barriers (figs 4-8);

*Regarding claim 16*, intervals between the bars and the outer circumference of the core are all the same.

*Regarding claim 34*, **Fong** discloses a rotor (figs 2-8) for a for a line-start reluctance motor, wherein the rotor comprising: rotor for a line-start reluctance motor, comprising:

a core having an axis-coupling hole in a coupling direction of a shaft;

a plurality of bars formed in the periphery of the core; and

a plurality of flux barriers having their both ends aligned in one direction to approach the bars, respectively, a width of the flux barriers being smaller than that of the bars which both ends of the flux barriers approach.

3. **Claims 25-26 and 30** are rejected under 35 U.S.C. 102(b) as being fully anticipated by **Suhr et al (US 3,243,620)**.

*Regarding claim 25*, **Suhr** discloses a rotor for a line-start reluctance motor, comprising: a core having an axis-coupling hole in a coupling direction of a shaft (22); a plurality of bars formed in the periphery of the core; and a plurality of flux barriers (47-50) having their both ends aligned in one direction to approach the bars, respectively, central lines of the bars facing the center of the core and central lines of both ends of the flux barriers being formed in the same directions; wherein

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*Regarding claim 25*, the central lines of the bars and the central lines of both ends of the flux barriers are formed on the same lines (fig 5), and

*Regarding claim 30*, a width of the flux barriers is equal to or smaller than that of the bars disposed in the alignment direction of the flux barriers.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 14 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fong**, as applied in the rejection of the base claims, in view of **Suhr et al.**

**Fong** discloses a rotor (figs 2-8) as claimed, except for the added limitations of a width of the outer circumferences of the bars adjacent to the outer circumference of the core is larger than that of the inner circumferences of the bars adjacent to the flux barriers.

Suhr, however, teaches a rotor having a width of the outer circumferences of the bars adjacent to the outer circumference of the core is larger than that of the inner circumferences of the bars (fig 1, 5) for the purpose of improve the performance of the motor via enhancing the magnetic interaction between the rotor's outer circumference and the stator's facing poles while reducing magnetic interference between the rotor's inner circumference and the shaft.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the rotor by configuring the width of the outer circumferences of the bars adjacent to the outer circumference of the core is larger than that of the inner circumferences of the bars, as taught by Suhr. Doing so would improve the performance of the motor via enhancing the magnetic interaction between the rotor and the stator thereof. Furthermore, it has

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been held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955) (emphasis added).

5. **Claim 33** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Suhr**, as applied in the rejection of the base claims, in view of **Fong**.

**Suhr** discloses a rotor (figs 1-5) as claimed, except for the added limitations of a width of the flux barriers is equal to or smaller than that of the bars disposed in the alignment direction of the flux barriers.

Fong, however, teaches the rotor having conductor bars and barriers, wherein a width of the flux barriers is equal to or smaller than that of the bars disposed in the alignment direction of the flux barriers (figs 2-8) for the purpose of enhance the magnetic characteristics of the rotor by not overly obstructing the magnetic flux flow. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the rotor by configuring a width of the flux barriers is equal to or smaller than that of the bars disposed in the alignment direction of the flux barriers, as taught by Fong. Doing so would improve the performance of the motor and ensure not overly obstructing the magnetic flux thereof. Furthermore, it has been held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955) (emphasis added).

#### ***Allowable Subject Matter***

**Claims 2, 5-10, 13, 17-24, 27-29, 31-32, 35-37, and 39-40** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Claims 41-46** are allowed.

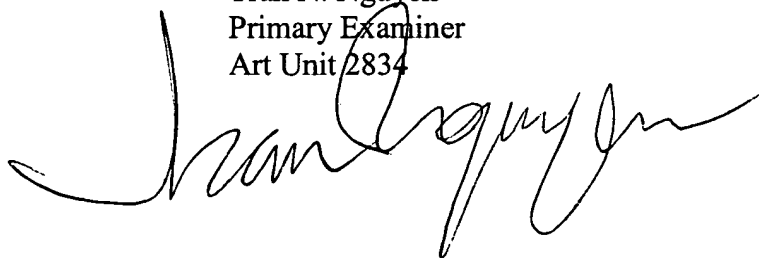
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tran N. Nguyen  
Primary Examiner  
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A handwritten signature in black ink, appearing to read 'Tran N. Nguyen', is written over the printed name and title.